1.12 Targeted Shorebird and Wading Bird Monitoring
Last Updated 1/14/2016

When staffing allows, refuge-wide waterfowl monitoring **occurs year-round on a bi-weekly basis**. The number of individuals by species within each water management unit is recorded. This survey targets 6-ROC species as defined in the HMP. These include: **American Bittern** (*Botaurus lentiginosus*), **Virginia Rail** (*Rallus limicola)*, **American Avocet** (*Recurvirostra americana*), **Long-billed Curlew** (*Numenius americanus*), **White-faced Ibis** (*Plegadis chihi*), and **Snowy Plover** (*Charadrius nivosus*).

This ISI is only intended to be used until such time as the Region 6 adaptation of the Integrated Waterbird Management and Monitoring (IWMM) is completed and uploaded to ServCat. At that time, a site-specific protocol will be developed for the Refuge as a step-down from the finalized Region 6 IWMM methodology and the new site-specific SOP will be replace this ISI and should be linked to the Refuge's IMP through PRIMR*.

Updating the water monitoring protocols and development of the site-specific protocol should be coordinated with the IMP Zone Biologist.

What to Take in the Field:

- ☐ **6 Blank Datasheets** – 1 for each species
- ☐ **6 Refuge map w/ sub-units** – 1 for each species
- ☐ **Pencils**
- ☐ **Clip Board**
- ☐ **Binoculars**
- ☐ **Spotting Scope**
- ☐ **Bird Identification book/s**

Datasheets:

1. **Blank survey datasheets** are available in the '**Bird Surveys Blank Datasheet'** binder.
2. **Refuge maps with sub-units** are available in the '**Bird Surveys Blank Datasheet'** binder.

Survey Methodology:

1. This can be done with one experience person, but it is much easier and **more efficient with two** who can trade off being observer and reorder on opposite sides of the vehicle.
2. This survey entails systematically driving the Refuge and thoroughly surveying wetland habitats for and recording sighting of these species. You want to drive the Refuge in such a way as to minimize disruption to the birds and to avoid driving past a wetland habitat area before you are surveying that area. You should drive north on the western most road and start with the northern most management units and move south. **Plan out your path prior to beginning surveys**.
3. As you approach open water, you will need **slow down to a crawl**, minimizing noise and trying to avoid spooking the birds. They will move off some, but you want to avoid a large 'flush'.
4. Once you get close enough that you can start to be able to identify species through the spotting scope, stop and begin your count.
5. For each individual or group* you count, place a corresponding dot on that species map for the location at which you first sighted the individual or group and then next to that dot, place the count value next to it(see past survey sheets for examples).
6. Each targeted species should have their own datasheet and map!

7. **In some cases, you will need to take turns surveying on both side of the vehicle before moving forward some.** Once you have identified and count all that you can, you will move forward until you are able to start counting 'new' birds. <u>Some bird may move, do your best to track where they go.</u> **If they move into an area you haven't counted yet make sure NOT to re-count (double count) them.**

8. Don't forget to survey flooded saltgrass and the southern edges of the pools.

9. Continue your survey until the entire Refuge has been surveyed.

Data Entry Instructions:

Data will be entered in two formats, the raw will be entered into the '*Targeted ROC_SNPL data base*' and then the locations will be mapped in GIS.

<u>**Database Data Entry:**</u>

1) Open the Targeted ROC_SNPL data base using the following location *Group Data I: Biology Program/Databases/ Targeted Bird Surveys_ROCsandSNPL.*

2) Upon opening the database you will be presented with a main menu offering six selections, choose "**Targeted Bird Survey Data Entry Form**", this will bring you to the data entry form.

3) Now you are at a blank data entry form, the sections on the form should correspond to the raw data collection sheet. You may begin to type the common name into the drop down box until the correct common names appears. **Common names should be typed as they appear at the bottom of the datasheet, hyphens are important.**

4) The '**Date'** must be in the format provided on the form, for example August 1st, 2014 must be type 08/01/2014 for it to be accepted in the form.

5) The '**Time'** must be in 24-hour format. If the survey takes place before noon, the time should be entered with a zero in front of it the hour is a single digit, such as 09:12.

6) '**Week Number'** should range between 1 and 52 and the form will not accept a number outside of this range.

7) '**Year'** only accepts 1959 thru 2100 to avoid typos such as "2914".

8) Enter in the total number of birds observed per group or individual in the '**Count**' box.

9) Select the appropriate 'Unit' and 'Sub-unit'. If your data was collected at 'DPG Hot Springs', select it both in the unit and sub-unit drop down menus.

10) The 'Habitat' drop down allows you to type in the habitat if you have selected "other" on the raw data form. **Note, the average distance field will auto calculate after the third distance is entered and does not require entry.**

11) **If recorded, enter** '**Latitude**' and '**Longitude**' should both be entered as decimal degree coordinates (i.e. 39.XXXXX and 113.XXXXX).

12) **If recorded, enter** the recorded corresponding compass heading into '**Compass'**.

13) **If recorded, enter** '**Distance One**', '**Distance Two**', and '**Distance Three**' should be entered in **meters.** There are some instructions on the form to assist you if necessary, such as; "if only one distance is available please use it for each distance field" the average value will not calculate properly without an entry in each of the three fields, it is important to fill in each field.

14) '**Average Distance**' is auto calculated – **you do not need to enter anything in this field.**

15) **If the bird is banded** you will then have to record the band information. The band information is **automatically** set to "Not Banded" and "Not Available" for both metal and color bands. These should be changed only if bands are observed. The **'Banded/Type of Band'** drop down menu provides options for the type or types of bands observed. "Not Readable" only applies if the bands were observed but could not be properly identified.

16) There is a drop down menu for **'Metal Band'** with guidance on how you should enter the data from the band into the drop down menu (it is designed to provide you with options or allow for the user to enter unique information).

17) **'Color Band Info'** provides two check boxes "Not Available" is selected by default, if bands were not readable this box should be unchecked and "Not Readable" should be check. **Only select one box if there are no codes to be entered.** If color codes are available please enter them into the appropriate fields and ensure that both of the above boxes are **unchecked**.

18) **'Sex'** should be unidentified and is automatically set as such, unless the observer is 100% certain then a selection can be made.

19) Any additional relevant comments recorded by the observers should be included within the "**Comments**' box.

20) **Double check that the data you have entered** is the same as it appears on the raw data format and that each applicable field is filled. Note, the survey type and banded/type of band fields are REQUIRED, the data will not save without this information.

21) When you are finished you can either continue pressing tab until a new form opens or click the black arrow with yellow symbol.

22) **Please initial and date any raw data forms that have been entered** into the database to avoid duplicate entries.

<u>GIS Data Entry</u>:

The 'Targeted ROC Data' is mapped in GIS in the '**Targeted Waterbirds_AllData'** map located on the local server at: *I:\GIS DATA and MAPS\Maps\Animal_maps\birds*.

All new sighting locations should be added to the shapefile named **All_Species_All_Years** (this shapefile is saved as "Bird_location_points" at: *I:\GIS DATA and MAPS\Shape_files\birds*).

Points can be added using the editor toolbar and the locations you just marked on the survey maps.

Contact Jo Ann Dullum if you need assistance.